



S Farm Retrieval Status S-112 and S-102

Blaine Barton

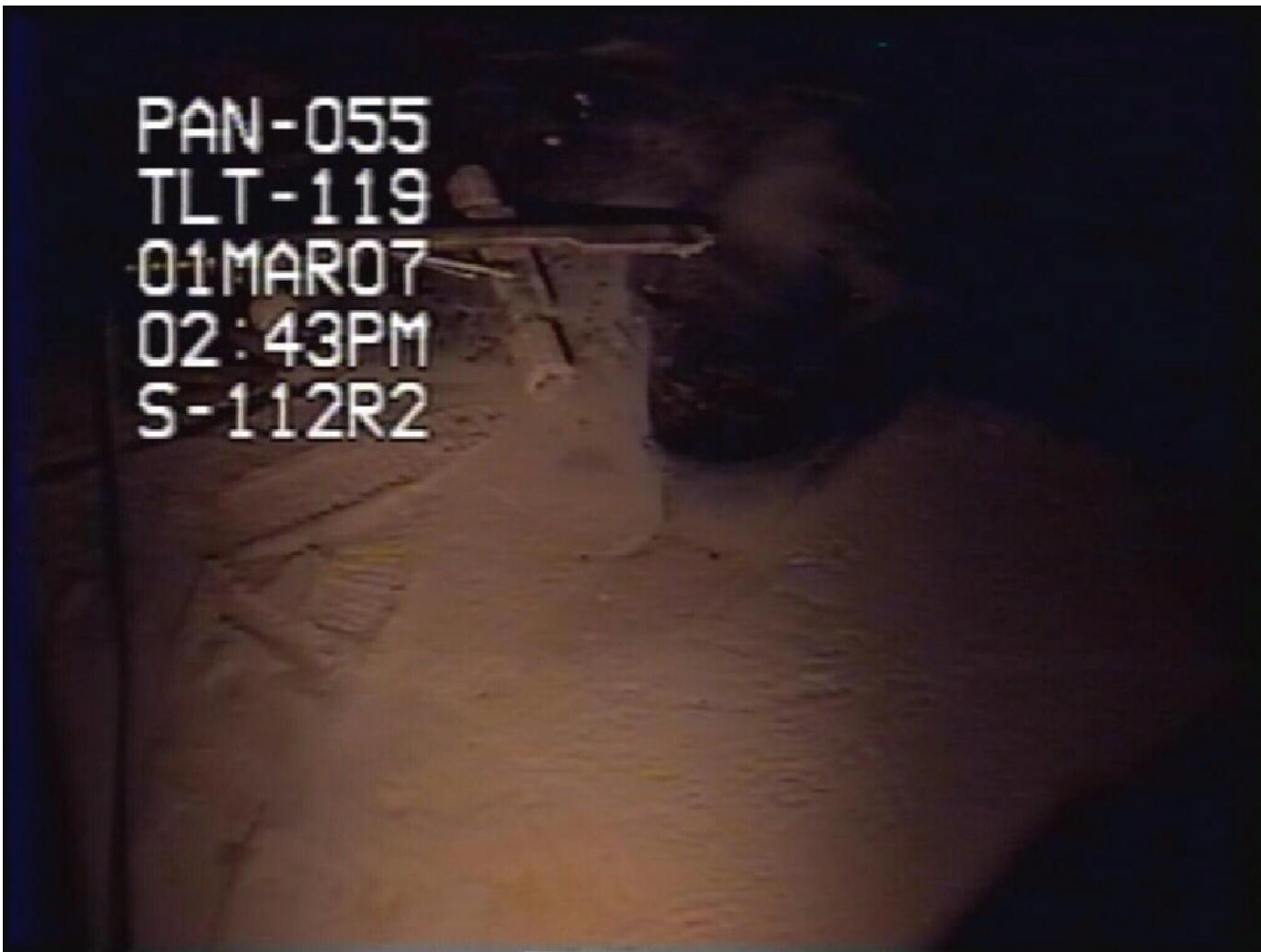


CH2MHILL

S-112 Status

- Active retrieval of tank S-112 was completed on March 1, 2007.
- Retrieved 612,000 gallons of waste.
- Final waste volume remaining was 2400 gallons.
- Sample result show that the remaining waste is greater than 90% aluminum oxide (gibbsite).

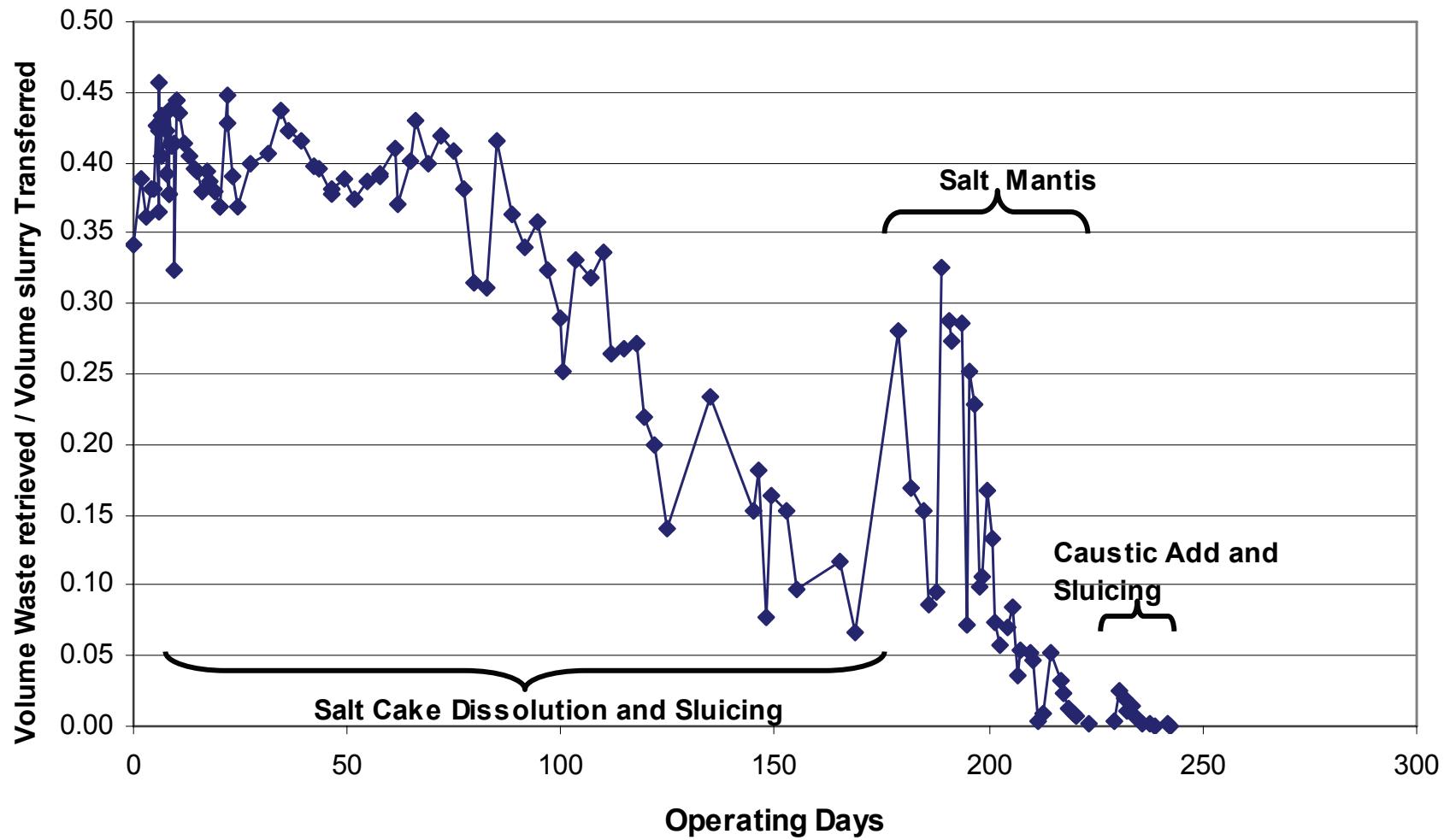
S-112 Status



S-112 Status

- Salt Cake Dissolution
 - Continuous
 - Add - soak – pump
- Sluicing
- Salt Mantis assisted dissolution and sluicing
- Caustic digest

S-112 Status



S-112 Status

- Saltcake dissolution and sluicing
 - Retrieval limited only by pumping rate until 45 % complete.
 - Became dissolution limited requiring additional soak time between pumping
 - Density works against this approach.
 - Continued as add/sludge – soak – pump mode until limit of technology was reached at 95 % complete.

S-112 Status

- Salt Mantis Assist.
 - Found that the area that was submerged had softened during the time it took to develop the Salt Mantis.
 - Very effective in breaking up the hard salt layer in 70 hours of operation.
 - Found it also excelled at suspending solids and stirring the tank contents.
 - Over 200 operating hours on first set of nozzles.

S-112 Status

- Caustic Digest
 - 25 wt% caustic diluted to about 6 molar in the tank. Allowed to soak for about 70 days with periodic stirring.
 - No detectable change in solution density.
 - When pumped remaining waste seemed to be easier to suspend/retrieve.
 - Concluded it was largely ineffective.

S-112 Status

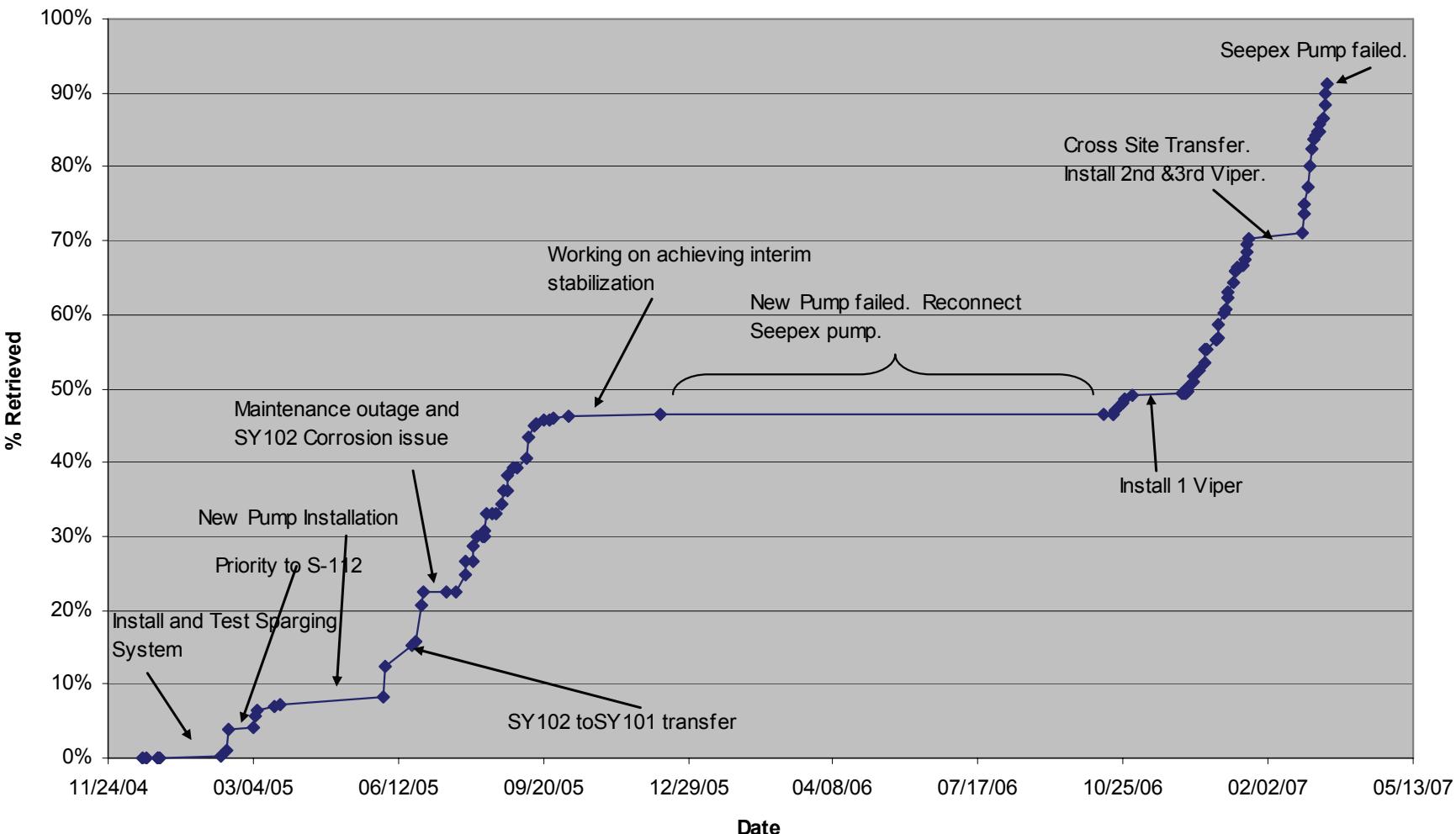
- Caustic Digest.
 - 50 wt% caustic to be used as a suspension medium.
 - Soaked 3 days. Clear signs of chemical reaction.
 - Pumped out with stirring and flushed tank with water. Appeared to suspend much better than prior to soak.
 - Met volume target.

S-102 Status

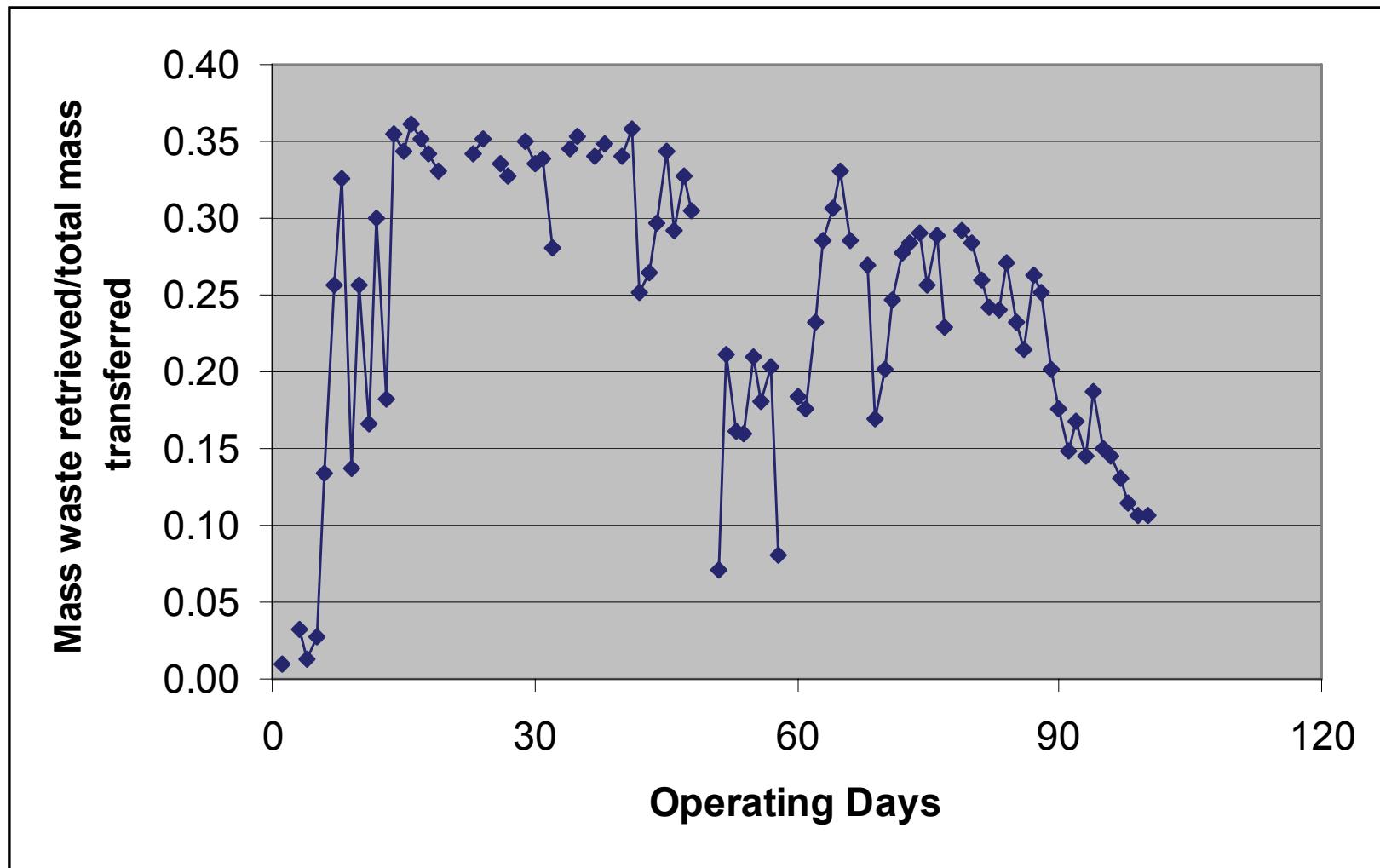
- Currently shut down while recovering from the waste spill.
- Tank retrieval is currently 94 % complete. About 430,000 gallons retrieved.
- Installed rotary vipers to increase solids suspension.
- Reconnected Seepex pump and progressed from 45% to 92% retrieved.

S-102 Status

S-102 Schedule Progress



S-102 Status



S-102 Status

- Pump failed in a condition that made it difficult to remove.
- Installed replacement pump in different riser.
- 2nd generation pump. Improvements include auger on drive shaft, separate dilution and sparging lines, no screen, height adjustment capability.

S-102 Status

- Rotary Viper and Sluicing Rotary Viper.
 - 7 foot vertical travel; 360 degree rotation or aim able.
 - Effective in suspending solids to about 10 foot radius.
 - Spare nozzles became plugged by phosphate crystallization which can be cleared by heating.
 - Limited sluicing capability.

S-102 Status

- Rotary Viper



Video clip srv



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Questions?

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